IN THE CLAIMS:

Claims 7-11, 15-18, 25-45 remain pending in this application. Claim 15 has been amended. No claims have been canceled. Claims 1-6, 12-14, 19-24 have been withdrawn. Claims 28-45 have been added. A listing of claims follows:

1. (Withdrawn) A method comprising:

receiving packet data;

concatenating the packet data into a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, wherein the concatenation can be across any locations within the TDM SONET signal and wherein a size of the concatenation can be in increments of single SONET frames; and

transmitting the TDM SONET signal having the concatenated packet data.

2. (Withdrawn) The method of claim 1, wherein the packet data is concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

3. (Withdrawn) The method of claim 1, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

4. (Withdrawn) A method comprising:

receiving a number of packets within a first Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal having a number of SONET frames, wherein the packets are concatenated across any of the number of SONET frames within the first TDM SONET signal, such that a size of the concatenation can be in increments of single SONET frames;

upon determining that the number of packets are being transmitted to a first location

that cannot extract the number of packets from any of the number of SONET

frames in the first TDM SONET signal, performing the following:

extracting the number of packets from the first TDM SONET signal;

filling a number of SONET frames in a second TDM SONET signal with

transmission data that includes the number of packets, wherein the filling is

equally interleaved across the number of SONET frames in the second TDM

SONET signal and;

transmitting the second TDM SONET signal to the first location; and

upon determining that the number of packets are being transmitted to a second location

that can extract the number of packets from any of the number of SONET frames in

the first TDM SONET signal, transmitting the first TDM SONET signal to the

second location.

5.   (Withdrawn) The method of claim 4, wherein the first location is a network element

that is external to a network ring.

6.   (Withdrawn) The method of claim 4, wherein the second location is a network

element that is internal to a network ring.

7.   (Original) A method comprising:

receiving portions of packets;

placing the portions of packets into buffers;

determining packet boundaries among the portions of packets in the buffers, wherein

the determining of the packet boundaries locates a number of packets;

concatenating the number of packets into a Time Division Multiplexing (TDM)

Synchronous Optical Network (SONET) signal, wherein the concatenation can be

across any locations within the TDM SONET signal and wherein a size of the concatenation can be in increments of single SONET frames; and

transmitting the TDM SONET signal having the number of concatenated packets.

8.   (Original) The method of claim 7, wherein the number of packets are concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

9.   (Original) The method of claim 7, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

10.   (Original) A network element of a network ring comprising:

 physical connection circuitry having a number of buffers, the number of buffers to hold packet data received from a different network element that is external to the network ring, the physical connection circuitry to determine packet boundaries from the packet data; and

packet processing circuitry coupled to the physical connection circuitry, the packet processing circuitry to receive the packets from the physical connection circuitry and to concatenate the packets into any location with a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal.

11.   (Original) The network element of claim 10, wherein a size of the concatenation can be in increments of single SONET frames.

12.   (Withdrawn) An apparatus comprising:

 a number of ports, each of the number of ports to receive a number of packets within a first Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal having a number of SONET frames, wherein the number of packets is

concatenated across any of the number of SONET frames within the first TDM SONET signal, such that a size of the concatenation can be in increments of single SONET frames;

a number of buffers coupled to the number of ports, the number of buffers to hold the number of packets received from the number of ports; and

a processing element coupled to the number of ports and the number of buffers, the processing element to perform the following:

upon determining that the number of packets are being transmitted to a first location that cannot extract the number of packets from any of the number of SONET frames in the first TDM SONET signal, performing the following:

extracting the number of packets from the first TDM SONET signal;

filling a number of SONET frames in a second TDM SONET signal with transmission data that includes the number of packets, wherein the filling is equally interleaved across the number of SONET frames in the second TDM SONET signal and;

transmitting the second TDM SONET signal to the first location; and

upon determining that the number of packets are being transmitted to a second location that can extract the number of packets from any of the number of SONET frames in the first TDM SONET signal, transmitting the first TDM SONET signal to the second location.

13.   (Withdrawn) The apparatus of claim 12, wherein the first location is a network element that is external to a network ring.

14.   (Withdrawn) The apparatus of claim 12, wherein the second location is a network element that is internal to a network ring.

15.   (Currently Amended) A network comprising:

a first set of network elements, at least one of the first set of network elements to

transmit packet data; and

a second set of network elements, the second set of network elements to transmit a

Time Division Multiplexing (TDM) Synchronous Optical Network (SONET)

signal, the TDM SONET signal having a number of SONET frames, wherein each

of the ~~first~~ second set of network elements includes:

physical connection circuitry having a number of buffers, the number of

buffers to hold portions of the packet data received from the at least one of the first

set of network elements, the physical connection circuitry to determine packet

boundaries for the packet data; and

packet processing circuitry coupled to the physical connection circuitry, the

packet processing circuitry to receive the packets from the physical connection

circuitry and to concatenate the packets into any location with a Time Division

Multiplexing (TDM) Synchronous Optical Network (SONET) signal.

16.   (Original) The network of claim 15, wherein the number of packets are concatenated

within locations in the TDM SONET signal not occupied by TDM data traffic.

17.   (Original) The network of claim 15, wherein the at least one non-ring network

element includes a router.

18.   (Original) The network of claim 15, wherein a communication of packets between the

number of network elements and the at least one non-ring network element is within a TDM

SONET signal such that the number of frames transmitting the number of packets are

concatenated evenly across the TDM SONET signal.

19.   (Withdrawn) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:

receiving packet data;

concatenating the packet data into a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, wherein the concatenation can be across any locations within the TDM SONET signal and wherein a size of the concatenation can be in increments of single SONET frames; and

transmitting the TDM SONET signal having the concatenated packet data.

20.   (Withdrawn) The machine-readable medium of claim 19, wherein the packet data is concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

21.   (Withdrawn) The machine-readable medium of claim 19, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

22.   (Withdrawn) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:

receiving a number of packets within a first Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal having a number of SONET frames, wherein the number of packets are concatenated across any of the number of SONET frames within the first TDM SONET signal, such that a size of the concatenation can be in increments of single SONET frames;

upon determining that the number of packets are being transmitted to a first location that cannot extract the number of packets from any of the number of SONET frames in the first TDM SONET signal, performing the following:

extracting the number of packets from the first TDM SONET signal;

filling a number of SONET frames in a second TDM SONET signal with

transmission data that includes the number of packets, wherein the filling is equally

interleaved across the number of SONET frames in the second TDM SONET

signal and;

transmitting the second TDM SONET signal to the first location; and

upon determining that the number of packets are being transmitted to a second

location that can extract the number of packets from any of the number of SONET

frames in the first TDM SONET signal, transmitting the first TDM SONET signal

to the second location.

23.   (Withdrawn) The machine-readable medium of claim 22, wherein the first location is
a network element that is external to a network ring.

24.   (Withdrawn) The machine-readable medium of claim 22, wherein the second location
is a network element that is internal to a network ring.

25.   (Original) A machine-readable medium that provides instructions, which when
executed by a machine, cause said machine to perform operations comprising:

receiving packet data;

placing the packet data into buffers;

determining packet boundaries among the packet data in the buffers, wherein the

determining of the packet boundaries locates a number of packets;

concatenating the number of packets into a Time Division Multiplexing (TDM)

Synchronous Optical Network (SONET) signal, wherein the concatenation can be

across any locations within the TDM SONET signal and wherein a size of the

concatenation can be in increments of single SONET frames; and

transmitting the TDM SONET signal having the number of concatenated packets.

26. (Original) The machine-readable medium of claim 25, wherein the number of packets are concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

27. (Original) The machine-readable medium of claim 25, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

28. (New) A method comprising:

receiving portions of packets;

placing the portions of packets into buffers;

determining packet boundaries among the portions of packets in the buffers, wherein the determining of the packet boundaries locates a number of packets;

concatenating the number of packets into a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, wherein the concatenation can be across any locations within the TDM SONET signal, wherein a size of the concatenation can be in increments of single SONET frames, and wherein the number of packets are concatenated within locations in the TDM SONET signal not occupied by TDM data traffic; and

transmitting the TDM SONET signal having the number of concatenated packets.

29. (New) The method of claim 28, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

30. (New) A network element of a network ring comprising:

physical connection circuitry having a number of buffers, the number of buffers to hold packet data received from a different network element that is external to the

network ring, the physical connection circuitry to determine packet boundaries from the packet data; and

packet processing circuitry coupled to the physical connection circuitry, the packet processing circuitry to receive the packets from the physical connection circuitry and to concatenate the packets into any location with a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, wherein the packets are concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

31.   (New) The network element of claim 30, wherein a size of the concatenation can be in increments of single SONET frames.

32.   (New) A network comprising:

a first set of network elements, at least one of the first set of network elements to transmit packet data; and

a second set of network elements, the second set of network elements to transmit a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, the TDM SONET signal having a number of SONET frames, wherein each of the second set of network elements includes:

physical connection circuitry having a number of buffers, the number of buffers to hold portions of the packet data received from the at least one of the first set of network elements, the physical connection circuitry to determine packet boundaries for the packet data, and

packet processing circuitry coupled to the physical connection circuitry, the packet processing circuitry to receive the packets from the physical connection circuitry and to concatenate the packets into any location with a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, wherein the

packets are concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

33.   (New) The network of claim 32, wherein the at least one non-ring network element includes a router.

34.   (New) The network of claim 32, wherein a communication of packets between the number of network elements and the at least one non-ring network element is within a TDM SONET signal such that the number of frames transmitting the number of packets are concatenated evenly across the TDM SONET signal.

35.   (New) A machine-readable medium that provides instructions, which when executed by a machine, cause said machine to perform operations comprising:

receiving packet data;

placing the packet data into buffers;

determining packet boundaries among the packet data in the buffers, wherein the determining of the packet boundaries locates a number of packets;

concatenating the number of packets into a Time Division Multiplexing (TDM) Synchronous Optical Network (SONET) signal, wherein the concatenation can be across any locations within the TDM SONET signal, wherein a size of the concatenation can be in increments of single SONET frames, and wherein the number of packets are concatenated within locations in the TDM SONET signal not occupied by TDM data traffic; and

transmitting the TDM SONET signal having the number of concatenated packets.

36.   (New) The machine-readable medium of claim 25, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

37. (New) A method comprising:

   receiving packet data;

   concatenating the packet data into a Time Division Multiplexing (TDM) Synchronous

      Optical Network (SONET) signal, wherein the concatenation can be across any

      locations within the TDM SONET signal, wherein a size of the concatenation can

      be in increments of single SONET frames, and wherein the number of packets are

      concatenated within locations in the TDM SONET signal not occupied by TDM

      data traffic; and

   transmitting the TDM SONET signal having the concatenated packet data.

38.   (New) The method of claim 37, wherein the packet data is concatenated within

locations in the TDM SONET signal not occupied by TDM data traffic.

39.   (New) The method of claim 37, wherein the transmitting of the TDM SONET signal

is between two network elements in a network ring.

40.   (New) A machine-readable medium that provides instructions, which when executed

by a machine, cause said machine to perform operations comprising:

   receiving packet data;

   concatenating the packet data into a Time Division Multiplexing (TDM) Synchronous

      Optical Network (SONET) signal, wherein the concatenation can be across any

      locations within the TDM SONET signal, wherein a size of the concatenation can

      be in increments of single SONET frames, and wherein the number of packets are

      concatenated within locations in the TDM SONET signal not occupied by TDM

      data traffic; and

   transmitting the TDM SONET signal having the concatenated packet data.

41.   (New) The machine-readable medium of claim 40, wherein the packet data is concatenated within locations in the TDM SONET signal not occupied by TDM data traffic.

42.   (New) The machine-readable medium of claim 40, wherein the transmitting of the TDM SONET signal is between two network elements in a network ring.

43.   (New) A method, comprising:

generating a set of packets by determining packet boundaries from portions of packets stored within at least one buffer; and

placing each one of the set of packets within any time divided signal location that is not occupied by time divided data traffic, without interleaving each one of the set of packets equally across a time divided signal.

44.   (New) The method of claim 43, further comprising: transmitting the time divided signal to a first location that can extract the set of packets from any time divided signal location that is not occupied by time divided data traffic.

45.   (New) The method of claim 43, further comprising:

transferring each one of the set of packets within any time divided signal location that is not occupied by time divided data traffic into an interleaved time divided signal location within a second time divided signal; and

transmitting the second time divided signal to a second location that can extract the set of packets from any time divided signal location.